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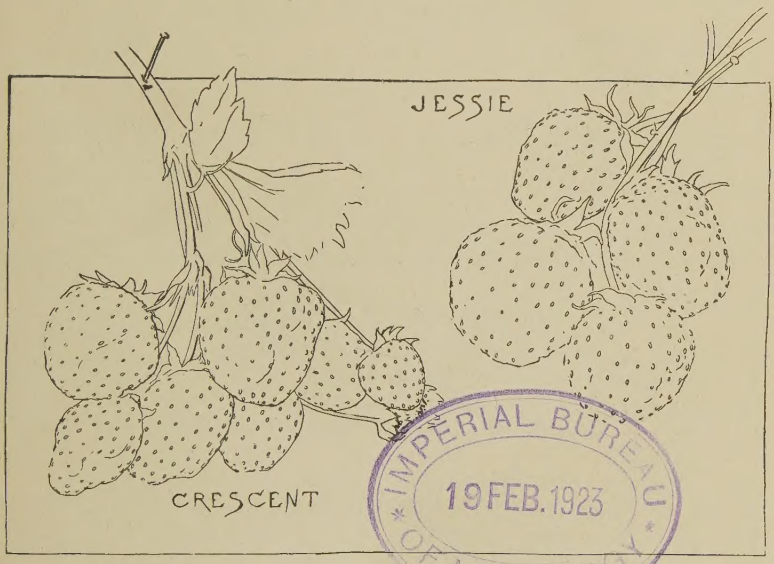
Cornell University Agricultural Experiment Station.

HORTICULTURAL DIVISION.

VARIETIES AND LEAF-BLIGHT OF THE STRAWBERRY.



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By L. H. BAILEY.

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BULLETINS OF 1894.

62. The Japanese Plums in North America.
63. Co-operative Test of Sugar Beets.
64. On Certain Grass-Eating Insects.
65. Tuberculosis in Relation to Animal Industry and Public Health.
66. Test of Cream Separators.
67. Some Recent Chinese Vegetables.
68. The Cultivated Poplars.
69. Hints on the Planting of Orchards.
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72. The Cultivation of Orchards.
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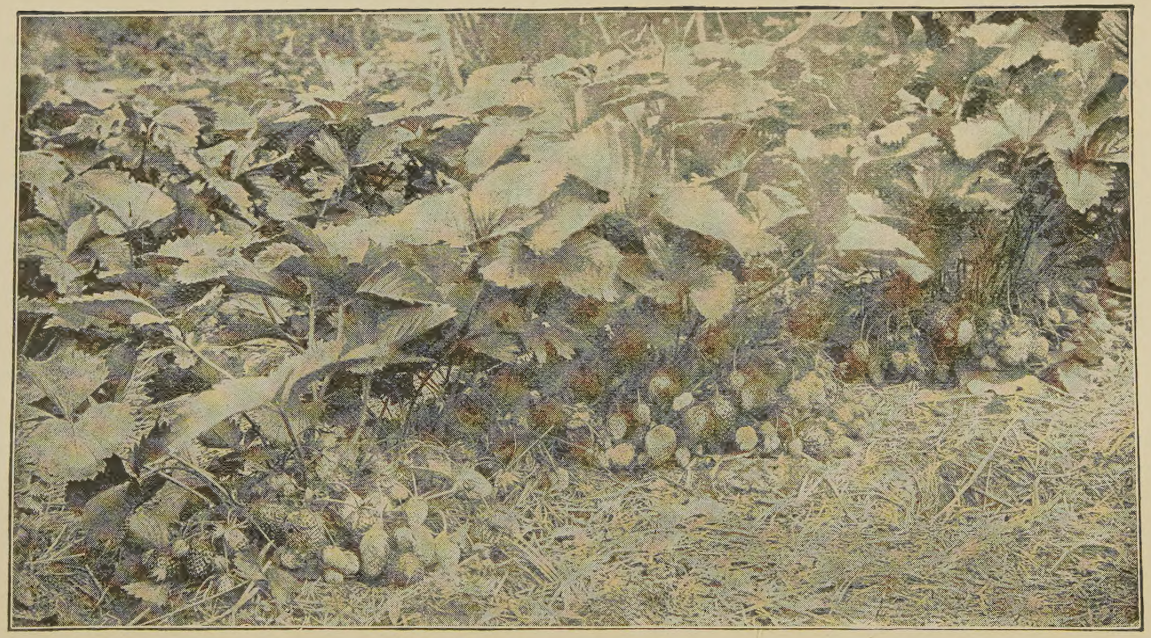
79. Varieties and Leaf Blight of the Strawberry.

CORNELL UNIVERSITY, ITHACA, N. Y., Dec. 10, 1894.

THE HONORABLE COMMISSIONER OF AGRICULTURE, ALBANY.

Sir :—There are two questions which the strawberry growers of western New York are always asking: What are the best varieties? How is the leaf-rust to be kept in check? I have endeavored to answer these questions, and I submit the attempt for publication under Section 87, Chapter 675, of the Laws of 1894.

L. H. BAILEY.



Parker Earle Strawberry. Introduced in 1889 by T.V. Munson, Denison, Texas, and named for Parke Earle, a distinguished horticulturist of southern Illinois and Mississippi, and president of the American Horticultural Society. An offspring of Crescent crossed with a seedling of Miner. Flowers perfect. The variety is growing in favor, particularly where a late berry is desired.

VARIETIES AND LEAF-BLIGHT OF STRAWBERRIES.

I. VARIETIES.

What varieties of strawberries shall I plant? This, and similar questions, are always asked of the experimenter, and people seem to think that it is one of the simplest questions to answer. At all events, it is the universal impression that the experiment station officer, of all others, should be able to answer it definitely. He has the facilities and the time for making tests, and it seems, upon the face of it, that he should have exact knowledge of the merits of all novelties. Yet, there are so many difficulties and uncertainties pertaining to the so-called testing of varieties that the results often possess nothing of permanent value ; and there are certain reasons why the experimenter, if he derives his knowledge wholly from his own tests, is less competent to pronounce upon the merits of novelties than the grower himself.

What constitutes a test of a variety ? Simply this,—obtaining exact knowledge as to whether the variety is distinct from others and whether it is useful for certain places or purposes. It would seem to be simple enough to obtain such knowledge as this ; and yet it supposes that the experimenter knows all existing varieties,—which no one does or can,—and that he is equally expert in judging the merits of any and all plants which may be brought to him, from strawberries to chrysanthemums and celery to apples. But there are other difficulties, which inhere in the subject itself. To test a variety for any purpose, it is necessary to actually grow it and use it for that purpose. The chief end of most varieties is for the market, but the experiment station cannot grow varieties for commercial market. One crate or even one shipment does not test the shipping qualities of a variety, for these qualities vary with the season, the weather, the methods of transportation, and with the different pickings of the same variety ; and it is therefore impossible to give any adequate test to twenty or thirty or even more varieties of any one fruit, let alone

the many kinds of fruits and other products with which the experimenter is supposed to deal. It is said that one can judge from the looks and behavior of a variety if it will be a good shipper, but I must remind my reader that this short-cut method of arriving at conclusions is one reason why so many disappointing varieties are introduced. And besides this, the variety may behave differently in different seasons, and in every various soil and treatment. The emphatic impression of this fact upon my mind was the only good result which came out of my first test of strawberries. Over forty varieties were grown, and I made the most conscientious attempt not only to make notes upon productiveness and behavior, but to personally eat every kind. I ate across the patch north and south, east and west, backwards and forwards. The results of the whole test were duly published; whereupon a neighbor three miles away said it might all be very well, but the varieties did not behave that way with him!

What the farmer wants to know is the value of the variety upon his place, not upon the experiment station farm, and he is the only person who can find it out. To thoroughly test a variety is to introduce it. When it is once introduced, the general concensus of opinion of men who actually grow it for the purposes for which it is desired, forms the best and the only criterion of its value. Even then, there may be farms, as every horticulturist knows, upon which a variety that is generally condemned may succeed; and the variety is then not a failure. Now, the discovering of this concensus of opinion, and publishing it, is just the work which the experiment station can perform when it desires to spread information of varieties. The standard of actual sales in commercial plantations is the only correct one for market fruits and this is to be had only from farmers themselves. A series of tabulated reports, from growers who are capable judges of particular fruits, is capable of giving reliable information of varieties. If, in connection with such reports, the experimenter can add his own experience, very much will be gained; and he often has the great advantage of receiving varieties before they are put upon the general market. And the greater use he makes of the reports of others, the more valuable does his own variety patch become as a means of study and comparison.

I have said this much as a general answer to many inquiries from New York fruit growers asking for lists of fruits which they should plant, and as an explanation to originators or intro-

ducers of our attitude towards their novelties. We are always glad to receive new varieties for growing in the University gardens, and to make a written report of their behavior from time to time, but we have steadily refused to publish tests of them, except when

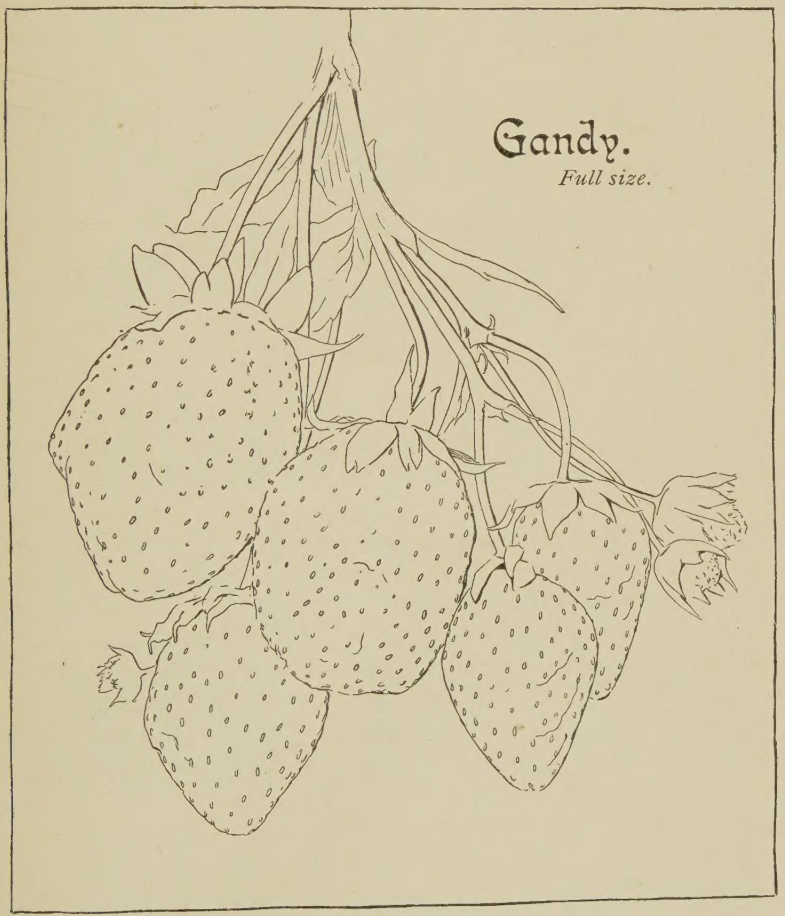
monographing certain groups of plants into which they naturally fall; and even then we have often derived much more information from the commercial plantations in various parts of the state than we have from our own orchards and gardens. I like to think of New York state as one great experiment station, from which we should try to catch up the lessons as they pass.

Just as the last strawberry season was closing and while the subject was fresh in the minds of the growers, I applied to over one-hundred strawberry raisers for information concerning varieties. Most of these men are rather large growers, and the list includes, I think, most of the leading commercial strawberry growers in the western part of the state. These replies are tabulated below, and they afford an accurate measure of the standing of the different strawberries amongst men most capable of judging them. More accurate conclusions could have been drawn concerning the distribution of varieties and their special adaptabilities if the number of respondents had been greater; but the replies are sufficient, I think, to enable the person who intends to plant strawberries in western New York to arrive at safe conclusions concerning varieties.

It is interesting to observe the great variety of soils upon which the respondents grow strawberries. Every type of farm soil is mentioned in the replies. Yet there is a very great preponderance in favor of the loamy and light soils. Of those growers who have an acre or more of berries, forty mention some variety of sand, or sandy or gravelly loam; while only sixteen mention clay in any form, and the greater number of these specify a clay loam, indicating that the original clay foundation has been well broken up by tillage and fertilizing. The aspect and comparative elevation of strawberry land are probably more important considerations in this state than the mere character of soil, for these features bear a vital relation to soil moisture and to frosts. The replies of the commercial growers certainly indicate that a great variety of soils can be used with entire success in the cultivation of the strawberry; but it is safe to infer that tillage and other treatments are important factors in rendering many of them utilizable.

NOTE.—The Bryant strawberry mentioned by respondent No. 47, is sometimes known as the Wayne County Eureka, but it differs much from the true

Eureka, particularly in being a perfect-flowered variety. The berry is very firm, slightly angular, ripening just after Crescent. I have named it for L. J. Bryant, a skillful gardener of Newark, who writes as follows concerning its origin: "It is a chance seedling which came up on our grounds where we had an old plantation of Sharpless and Crescent; as it shows in many ways the leading traits of both those varieties, we call it a cross of Crescent and Sharpless. It originated in 1885 and for the last five or six years we have planted it quite extensively on all kinds of soils. For vigor, freedom from disease, productiveness, high color, firmness for shipping, and a berry for all purposes, it leads anything I have found."



STRAWBERRY REPORTS.

Grower.	County.	Soil.	Area.	Earliest variety.	Latest variety.	Most productive variety.	Best shipper.	Best home berry.	Best all around strawberry.
1	Erie	Black Sand	2½ acres	Michel	Parker Earle	Crescent	Crescent	Crescent	Crescent
2	"	Slate Gravel	1 "	Michel	Haverland	Haverland	Haverland	Crescent	Haverland
3	"	Sandy Loam	5 "	Michel	Parker Earle	Haverland	Lovett	Gandy	Haverland
4	"	" "	3 "	Michel	Parker Earle	Crescent	Crescent and Wilson	Crescent and Parker Earle	Crescent
5	"	" "	4 "	Michel	Captain Jack	Crescent	Wilson	Crescent	Crescent
6	"	Gravelly Loam	1½ "	Beder Wood	Parker Earle or Timbrell	Haverland	Warfield	Haverland	Haverland
7	"	Sandy Loam and Slate Gravel	7 "	Michel	Wilson	Crescent	Crescent	Crescent	Crescent
8	"	Gravelly Loam	6 rows 110 ft. long	———	Parker Earle	Parker Earle	———	Parker Earle	Parker Earle
9	"	Sandy Loam	———	Wilson	Crescent	Wilson	Wilson	Crescent	Wilson
10	Niagara	" "	———	Crescent	Mt. Vernon	Crescent	Wilson	Crescent and Mt. Vernon	Crescent
11	"	Gravel and Clay	1 acre	Crescent and Michel	Parker Earle	Crescent and Wilson	Wilson	———	Wilson
12	"	Gravelly Loam	———	Sharpless	Sharpless	Sharpless	Wilson	Wilson	Wilson
13	"	Sandy and Clay Loam	¼ acre	Jessie	Bubach	Parker Earle	———	Wilson	———
14	Orleans	Sand and Clay	¼ "	Dayton and Wilson	Parker Earle	Parker Earle	Wilson	Dayton and Wilson	Wilson
15	"	Sandy Loam	1 "	Michel	Gandy and Timbrell	Crescent	Gipsy and Warfield	Jessie	Wilson and Bubach
16	"	Sandy	5 "	Michel	Gandy	Crescent	Gandy	Bubach	Warfield
17	"	Clay Loam	½ "	Michel	Gandy	Haverland	Warfield	Dew and Jessie	Dew
18	"	Clay	½ "	Crescent or Warfield	Mt. Vernon	Wilson	Wilson	Cumberland	Wilson

19	Orleans	Clay Loam	5 sq. rods	Warfield	Jessie	Warfield	———	Jessie	Warfield
20	Genesee	Sandy Loam	2 acres	Bubach	Manchester	ParkerEarle, Haverland	Manchester and Wilson	Bubach	Parker Earle
21	Wyoming	Dark Loam	———	Michel	Gandy	Sharpless	———	Sharpless	———
22	Allegany	Hard Stony	60 rods	Crescent	Mt. Vernon	Crescent	Miner	Crescent	Crescent
23	Livingston	Sandy Loam	½ acre	Crescent	Timbrell	Parker Earle	———	Parker Earle	Crescent
24	"	Dark Loam	———	Michel	Gandy	Sharpless	———	Sharpless	Sharpless
25	"	Gravelly Clay Loam	¼ acre	Bubach	Wilson	Wilson	Wilson	Bubach	———
26	"	Creek Wash	3 "	Michel	———	Crescent	———	Crescent	Crescent
27	Monroe	Sandy	1 "	Wilson	Bubach	Wilson	Wilson	Wilson	Wilson
28	"	Sandy Loam	4 "	Michel	Manchester	Warfield	Wilson	Jessie	Warfield
29	"	"	3 rows 15 rods long	Crescent	Gandy	Bubach	———	Bubach	———
30	"	"	¼ acre	Michel	Dew	Wilson	Wilson	Michel	Wilson
31	"	"	5 rows 12 rods long	Crescent	Bidwell	Bidwell	———	———	———
32	"	Sandy	1 acre	Wilson	Gandy	Wilson	———	Wilson	Wilson
33	"	Yellow Loam	2 "	Crescent	Wilson	Crescent	Wilson	———	———
34	"	Light Sandy	1 "	Crescent	Wilson	Crescent	Wilson	Wilson	Wilson
35	"	———	———	Michel	Gandy and Timbrell	Haverland	———	Sharpless	Burbach
36	"	Medium Light Sand	½ acre	———	———	———	———	———	Wilson
37	"	Sand and Gravel	1 "	Hoffman	Wilson	Wilson	Wilson	Bubach	Wilson
38	"	Sandy Loam	8 "	Michel	Eureka	Greenville	Wilson	Greenville, Beder Wood	Greenville
39	"	Sand and Gravel	¾ "	Wilson	———	Wilson	Wilson	Wilson	Wilson
40	"	Black Loam	1 "	Wilson	Bubach	Wilson	Wilson	Wilson	Wilson
41	"	Gravel and Chestnut Loam	4 "	Wilson	———	Wilson	Wilson	Jessie	Wilson
42	"	Gravel and Sandy loam	1 "	Gipsy fertilized with Wilson	Warfield	Warfield	Wilson	Gipsy	Gipsy and Wilson
43	"	Sandy	1 "	Scrawler	Jessie	Scrawler	Scrawler	Jessie	Scrawler
44	Wayne	Muck	20 rods	Wilson	Jessie	Wilson	Wilson	Jessie	Jessie
45	"	Sandy	¼ acre	Warfield	Mammoth	Warfield	Wilson	Warfield	Wilson

STRAWBERRY REPORTS.—CONTINUED

Grower	County.	Soil.	Area.	Earliest variety.	Latest variety.	Most productive variety.	Best shipper.	Best home berry.	Best all around strawberry.
46	Wayne	Sandy Loam	⅜ acres	Crescent and Wilson	———	Wilson	———	———	———
47	"	Heavy Loam and Light Sand	3 "	Crystal City and Michel	Gandy	Warfield	Bryant and Gandy	Crescent	Bryant
48	"	Sandy	2 "	Michel	Gandy	Warfield	Warfield	Bubach	Warfield
49	"	Sandy, Gravelly and Clay Loam	6 to 8 "	Michel	Shuckless, Gandy and Manchester	Warfield, Crescent and Haverland	Haverland, Michel and Warfield	Shuckless, Pineapple	Haverland
50	"	Sandy Loam	———	Michel	Miner	Lovett, Miner, Wilson	Wilson	Lovett and Miner	———
51	"	Heavy "	½ "	Crescent	Jersey Queen	Bubach	Crawford	———	Bubach
52	"	Clay "	½ "	Crescent	Wilson	Crescent	Wilson	———	———
53	"	" "	———	Jessie	Wilson	Wilson	Wilson	Jessie	Wilson
54	Ontario	Gravelly Loam	⅓ "	Bubach	Gandy	Bubach	Warfield	Bubach and Warfield	Warfield
55	"	Clay Loam	———	Crescent	New Dominion	Cumberland	———	Cumberland	———
56	"	Sandy	1 "	Bidwell	Parker Earle	Haverland	Burt	Jessie	Crescent
57	"	Sandy Loam	2 "	Michel	Burt	Crescent	Burt	Crescent	Crescent
58	"	Gravelly Loam	———	Wilson	Sharpless	Sharpless	———	Warfield	———
59	"	Light Sand	1–5 "	Chas. Downing	Parker Earle	Bubach	———	Bubach	Bubach
60	"	Clay Loam	3 "	VanDeman and Michel	Jersey Queen	Crescent	Wilson	Wilson	Jessie
61	"	" "	———	Crescent	Cumberland	James Vick	———	Princess and Cumberland	Princess
62	"	Clay	———	———	Sharpless	———	———	———	———
63	"	Stiff Clay	1½ "	Crescent	Eureka	Eureka	Wilson	Eureka	Eureka
64	"	Clay Loam	———	Michel	Yale	Warfield	Yale	Gillespie	Parker Earle
65	Yates	Yellow Clay Loam	1 "	Crescent	Sharpless	Crescent	Giant of the West	Sharpless	Crescent

66	"	Sandy Loam	2 acres	Wilson	Sharpless	Wilson	Wilson	Sharpless	Wilson
67	"	Clay "	1 "	Michel	Crescent	Sharpless and Crescent	Crescent	Sharpless	Sharpless
68	"	Sandy Clay	———	May King	Haverland	Haverland	———	Bubach and Harverland	Bubach
69	"	" Loam	1 "	Bidwell	Enhance	Enhance	Cumberland and Enhance	Cumberland and Enhance	Cumberland
70	Cayuga	Clay "	———	Crescent	Gandy	Crescent	Parker Earle	Greenville	Parker Earle
71	"	Strong Loam	———	Pacific or Crescent	———	———	———	———	———
72	Tompkins	Clay "	1 "	Michel	Gandy	Crescent	———	Crescent	Crescent
73	"	Gravelly Clay	1½ "	Michel	Eureka	Burt	Burt and Haverland	Bubach	Burt and Haverland
74	"	Stony Loan	1 "	Crescent and Michel	Gandy	Crescent	———	Crescent	Crescent
75	Onondaga	Gravelly Loam	———	Michel	Parker Earle	Parker Earle	———	Parker Earle	———
76	"	Sandy "	3 "	Crescent	Burt	Crescent	Gipsy	Parker Earle	Gipsy
77	"	Heavy Gravel	7 "	Michel	Manchester	Crescent	Captain Jack	Haverland	Captain Jack
78	Oneida	Gravelly Loam	2 "	Michel	Parker Earle	Haverland	Parker Earle	Haverland	Crescent
79	"	Gravel	¾ "	Michel	Haverland	Crescent	Haverland	Michel	Harverland
80	Herkimer	Clay Loam, Sand Loam, Gravel and Clay	20 "	Michel	Gandy	Crescent	Gandy	Michel	Bubach
81	"	Sandy Loam	6 "	Warfield	Bubach	Warfield	Warfield	Jessie	Warfield
82	"	" "	2 "	Crescent	Jessie	Warfield	Warfield	Warfield	Warfield
83	Montg'ry	Black Loam Clay	½ "	Michel	James Vick and Burt	Warfield	Warfield	Warfield	Warfield
84	Saratoga	Clay Loam	4 rods	Princess	Gandy	Sharpless	———	Sharpless	———
85	Jefferson	" "	2 acres	Michel	Burt	Crescent	Burt	Warfield	Warfield
86	"	Sandy Loam	1 "	Michel	Parker Earle	Warfield	Warfield or Parker Earle	Warfield	Crescent
87	Orange	Heavy Clay and Slate	1 "	Orange Co.	Timbrell	Enhance	Timbrell	Trimbell	Enhance
88	Oswego	Gravel & Loam	¾ "	Bubach	Parker Earle	Parker Earle	Parker Earle	Bubach	Parker Earle
89	"	Clay Loam	2 "	Beder Wood	Burt	Warfield	Warfield	Warfield	Burt
90	"	Stony "	5 "	Michel	Parker Earle	Parker Earle	Parker Earle	Parker Earle	Parker Earle

STRAWBERRY REPORTS.—*Concluded.*

Gr'wer	County.	Soil.	Area.	Earliest variety.	Latest variety.	Most productive variety.	Best shipper.	Best home berry.	Best all around strawberry.
91	Oswego	Gravel & Loam	10 acres	Michel	Parker Earle	Haverland	Parker Earle	Haverland	Haverland
92	"	Sand and Gravelly Loam	2 "	Beder Wood	Parker Earle	Warfield	Champion and Wilson	Beder Wood	Bubach
93	"	Gravelly Loam	½ "	Wilson	Atlantic	Burt	Atlantic	Burt	Atlantic
94	"	Clay	¾ "	Lovett Early	Gandy	Warfield	Warfield	Warfield	Warfield
95	"	Gravelly Loam	½ "	Michel	Parker Earle	Parker Earle	Parker Earle	Parker Earle	Parker Earle
96	"	Clay Loam and Gravel	1¼ "	Michel	Gandy	Haverland, Eclipse, Barton and Beder Wood	Gandy	Haverland, Middlefield	Haverland
97	"	Clay and Sandy Loam	4 "	Michel	Parker Earle	Parker Earle and Bubach	Parker Earle	Greenville	Bubach
98	"	Sandy Loam	9 "	Mt. Vernon	Parker Earle	Crescent	Atlantic	Sharpless	Haverland
99	"	Clay Loam and Black Sandy	2 "	Haverland	Burt and Haverland	Burt and Haverland	Burt	Haverland	Haverland
100	"	Stony	⅓ "	Bubach	Wilson	Bubach	Wilson	Bubach	Bubach
101	"	Sandy Loam and Stony	1 "	Crescent	Parker Earle	Parker Earle	Parker Earle	Parker Earle	Parker Earle
102	"	Mud and Gravel	2 "	Michel	Eureka	Bubach	Burt	Michel	Bubach
103	"	Clay and Stony Loam	1 "	Crescent	Atlantic	Crescent and Burt	Atlantic	Atlantic	Atlantic
104	"	Yellow Loam	5½ "	Beder Wood	Parker Earle	Parker Earle	Parker Earle	Bubach	Bubach
105	"	Clay Loam	2 "	Michel	Parker Earle	———	ParkerEarle, Edgar Queen	Jersey Queen	———
106	"	Gravel	½ "	Bubach	Atlantic	Bubach	Atlantic	Belmont	Atlantic
107	"	Sandy and Gravelly Loam	2 "	Beder Wood and Haverland	Parker Earle	Haverland	———	Haverland, Parker Earle	Haverland
108	"	Gravelly Loam	¾ "	Wilson	Atlantic	Wilson	Atlantic and Wilson	Bubach	Wilson
109	"	Clay Loam	½ "	Wilson	Burt	Wilson	Wilson	Wilson	Wilson
110	"	Sandy Loam	1 "	———	Sharpless	Parker Earle	Bubach	Crescent	Crescent

The most striking feature of these replies is the various character of them. Here are 52 varieties recommended for one or another purpose by 110 persons, and there are scarcely two persons in the list who recommended the same varieties for the various uses! This is conclusive evidence that a test ever so well made at Ithaca, would be of very little use in the various parts of the state; for the grower would still need to find out which ones of the varieties which we might recommend would be valuable at his own place, and as likely as not he would find distinct merits in varieties which we should condemn. The replies show very distinctly how great are the differences in the acknowledged merits of varieties in different places. Take, for instance, the six most popular varieties of the lot—Wilson, Crescent, Parker Earle, Warfield, Bubach, Michel—and notice the different estimates placed upon them in various sections. In Oswego county, where a late berry is desired, Parker Earle far outranks all other varieties. In Monroe county, Wilson is mentioned seven times where the other leading sorts are mentioned once, and Parker Earle is not mentioned at all! In Erie county, Crescent outranks all others. Let us see how many times these six varieties are mentioned in each of six leading strawberry counties of western New York:

Erie County (9 reports)—

Crescent,	Mentioned	18 times.
Parker Earle,	"	7 "
Wilson,	"	7 "
Michel,	"	6 "
Warfield,	"	1 "
Bubach,	"	0 "

Orleans County (6 reports)—

Wilson,	Mentioned	8 times.
Warfield,	"	7 "
Crescent,	"	3 "
Michel,	"	3 "
Parker Earle,	"	2 "
Bubach,	"	1 "

Monroe County (17 reports)—

Wilson,	Mentioned	41 times.
Bubach,	"	6 "
Crescent,	"	6 "
Michel,	"	5 "
Warfield,	"	4 "
Parker Earle,	"	0 "

Wayne County (10 reports)—

Wilson,	Mentioned	15 "
Warfield,	"	9 "
Crescent,	"	6 "
Michel,	"	5 "
Bubach,	"	3 "
Parker Earle,	"	0 "

Ontario County (11 reports)—

Crescent,	Mentioned	8 times
Bubach,	"	6 "
Warfield,	"	5 "
Wilson,	"	4 "
Michel,	"	3 "
Parker Earle,	"	3 "

Oswego County (23 reports)—

Parker Earle,	Mentioned	34 times.
Bubach,	"	16 "
Wilson,	"	13 "
Michel,	"	8 "
Warfield,	"	8 "
Crescent,	"	6 "

Wilson is the most popular variety in three counties, Crescent in two, and Parker Earle in one; although it should be said that where there are few reports and where one variety leads the others by only a small majority, definite conclusions cannot be safely drawn. But certainly there is no escape from the conviction that Wilson is still the leading berry in Monroe and Wayne counties, as Parker Earle is in Oswego county. It is interesting to note that Bubach occupies the last or next to the last place in three instances, but rises to the second place in the three other counties;

and Crescent, which is prominent in other reports, sinks to the last place in Oswego county. Parker Earle, which clearly leads in the minds of the Oswego growers, occupies next to the last place in Orleans, and is not even mentioned in Monroe or Wayne. It is singular that Michel occupies essentially the same position in all the counties, but this is because it really has no close competitors amongst the early berries.

This diversity of opinion is nowhere better shown than in the recommendations of berries for home use, a circumstance which arises from the fact that every person establishes his own standard of excellence. Thus, whilst there are 24 varieties named for shipping, there are 31 varieties recommended for home use,as follows:

Best Home Berries.

Bubach, 12 votes.
Crescent, 12 votes.
Jessie, 9 votes,
Wilson, 9 votes.
Sharpless, 8 votes,
Warfield, 8 votes.
Parker Earle, 7 votes.
Haverland, 5 votes.
Michel, 4 votes.
Cumberland, 2 votes.
Greenville, 2 votes.
Atlantic, 1 vote.
Belmont, 1 vote.
Beder Wood, 1 vote.
Burt, 1 vote.
Eureka, 1 vote.
Gandy, 1 vote.
Gillespie, 1 vote.
Gipsy, 1 vote.
Jersey Queen, 1 vote.
Timbrell, 1 vote.
Bubach and Haverland, 1 vote.
Bubach and Warfield, 1 vote.
Crescent and Mt. Vernon, 1 vote.
Crescent and Parker Earle, 1 vote.
Cumberland and Enhance, 1 vote.
Dayton and Wilson, 1 vote.
Dew and Jessie, 1 vote.
Greenville & Beder Wood, 1 vote.
Haverland & Middlefield, 1 vote.
Haverland & Parker Earle, 1 vote.
Lovett and Miner, 1 vote.
Princess and Cumberland, 1 vote.
Shuckless and Pineapple, 1 vote.

Thirty-one varieties; 101 votes.

The Best Shippers.

Wilson, 29,
Parker Earle, 10.
Warfield, 8.
Burt, 5.
Scrawler, 1.
Timbrell, 1.
Yale, 1.
Atlantic and Wilson, 1.

Atlantic, 4.
Crescent, 3.
Gandy, 4.
Haverland, 2.
Bubach, 1.
Captain Jack, 1.
Crawford, 1.
Giant of the West, 1.
Gipsy, 1.
Lovett, 1.
Miner, 1.
Bryant and Gandy, 1.
Burt and Haverland, 1.
Champion and Wilson, 1.
Crescent and Wilson, 1.
Cumberland and Enhance, 1.
Gipsy and Warfield, 1.
Haverland, Michel & Warfield, 1,
Manchester and Wilson, 1.
Parker Earle and Edgar Queen, 1.
Warfield or Parker Earle, 1.

Twenty-four varieties; 85 replies.

The Most Productive Varieties.

Crescent, 24 votes.
Wilson, 15 votes.
Warfield, 14 votes.
Haverland, 11 votes.
Parker Earle, 11 votes.
Bubach, 7 votes.
Sharpless, 4 votes.
Burt, 2 votes.
Enhance, 2 votes.
Bidwell, 2 votes.
Cumberland, 1 vote.
Eureka, 1 vote.
Greenville, 1 vote.
James Vick, 1 vote.
Scrawler, 1 vote.
Burt and Haverland, 1 vote.
Crescent and Burt, 1 vote.
Crescent and Wilson, 1 vote.
Haverland, Eclipse, Barton, and Beder Wood, 1 vote.
Lovett, Miner and Wilson, 1 vote.
Parker Earle and Bubach, 1 vote.
Parker Earle & Haverland, 1 vote.
Sharpless and Crescent, 1 vote.
Warfield, Crescent aud Haverland, 1 vote.

Twenty varieties; 106 votes.

The Early and Late Berries.

Earliest variety.	With persons.	Latest variety.	With persons.
Michel,	39	Parker Earle,	22
Crescent,	18	Gandy,	16
Wilson,	12	Wilson,	8
Bubach,	6	Burt,	5

Beder Wood,	4
Warfield,	3
Bidwell,	2
Jessie,	2
Chas. Downing,	1
Haverland,	1
Hoffman,	1
Lovett,	1
May King,	1
Mt. Vernon,	1
Orange Co.,	1
Princess,	1
Scrawler,	1
Sharpless,	1
Beder Wood and Haverland,	1
Crescent and Michel,	2
Crescent or Warfield,	1
Crescent and Wilson,	1
Crystal City and Michel,	1
Dayton and Wilson,	1
Gipsy fert. with Wilson,	1
Pacific or Crescent,	1
VanDeman and Michel,	1

Eighteen varieties; 108 persons.

Sharpless,	5
Atlantic,	4
Bubach,	4
Eureka,	4
Haverland,	4
Jessie,	4
Manchester,	3
Mt. Vernon,	3
Crescent,	2
Jersey Queen,	2
Timbrell,	2
Bidwell,	1
Captain Jack,	1
Cumberland,	1
Dew,	1
Enhance,	1
Miner,	1
Monmouth,	1
New Dominion,	1
Warfield,	1
Yale,	1
Burt and Haverland,	1
James Vick and Burt,	1
Parker Earle or Timbrell,	1
Shuckless, Gandy and Manchester,	1

Twenty-five varieties; 104 persons.

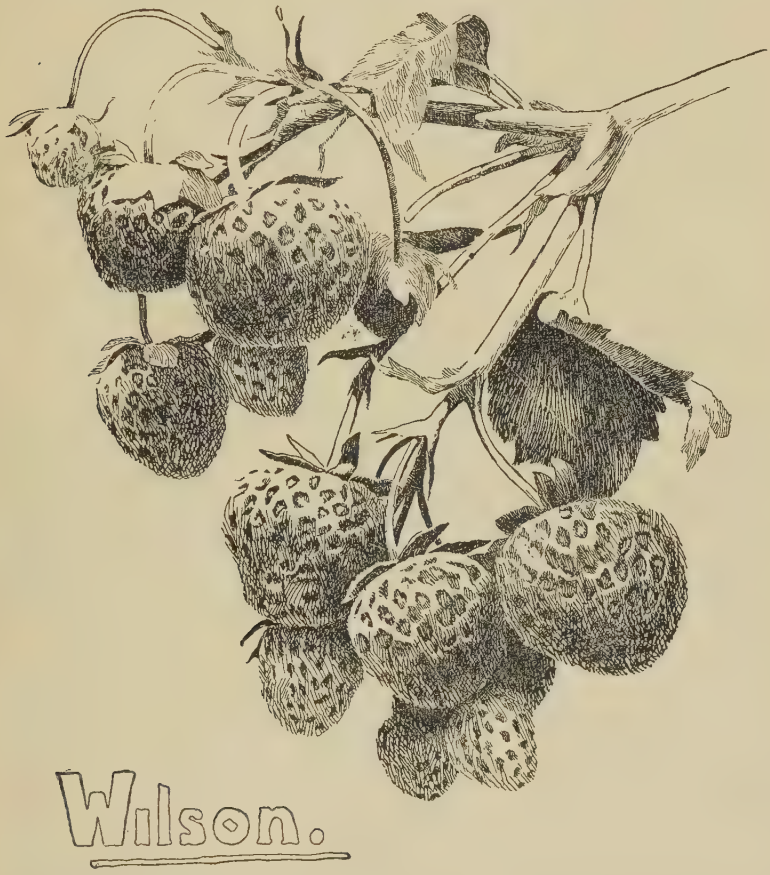
Best all around Strawberry.

Wilson, 20 votes.
Crescent, 16 votes,
Bubach, 10 votes.
Haverland, 10 votes.
Warfield, 10 votes.
Parkér Earle, 7 votes.
Atlantic, 3 votes.
Sharpless, 2 votes.
Jessie, 2 votes.
Bryant, 1 vote.
Burt, 1 vote.
Captain Jack, 1 vote.
Cumberland, 1 vote.
Dew, 1 vote.
Enhance, 1 vote.
Eureka, 1 vote.
Gipsy, 1 vote.
Greenville, 1 vote.
Princess, 1 vote.
Scrawler, 1 vote.
Burt and Haverland, } 1 vote.
Gipsy and Wilson, } 1 vote.
Wilson and Bubach, } 1 vote.

Twenty varieties; 94 votes.

Taken altogether, the Wilson is evidently still the most popular strawberry in western New York. It is strange that, amongst all the new varieties, there are none which are able to supplant it. Its great enemy is the leaf-blight or rust, and were it not for this the variety would certainly far outclass all others for general market purposes. I am not sure, however, that the variety which we now grow as the Wilson is identical with the original stock. It would be strange if it were so. In hundreds of generations of propagations, many of the variations induced by soil and methods

of cultivation are likely to be perpetuated. Careful propagators select young plants from those portions of the plantation which produce what they consider to be the ideal berry, but as no two propagators have the same ideal berry in mind, there must arise a series of divergences in the type. It is certain that there are



different strains of Wilson in cultivation, as there are different strains of the Crawford peach ; and it is no doubt this very diversity in the variety which adapts it so readily to many soils and uses. I often wonder if the original type of the Wilson, were it to be again introduced, would find so much favor as its modern progeny does.

Crescent, I imagine, will not hold its own so long as the Wilson has. Michel and Parker Earle, amongst the newer kinds, have distinct merits, one for its earliness and the other for its lateness and generally desirable qualities. Sharpless is passing out, whilst Bubach, Haverland and Warfield are holding their own.

II. LEAF-BLIGHT.

Forty-two of the 110 persons are troubled with the blight or rust of strawberry foliage. This shows that the trouble is rather serious. It is not uniformly spread over the state, however. Most of the replies in Monroe, Ontario and Wayne counties say

Bubach.

Warfield.

that the rust is not prevalent. In other places, it seems to have almost driven out the Wilson.

This blight is a fungus (*Sphærella Fragariæ*), the life history of which is discussed in Bulletin XIV. of this station (December, 1889). The spots showing fungous attack are brownish at first, but afterwards become dry and whitish, with a circle of red ; and finally the entire leaf assumes a red-spotted or red-discolored appearance. The blight does its worst mischief in the summer, after the fruit is off, by preventing growth and lessening the crop of the following year. The disease usually begins to attack the leaves before the fruit is off, however, and in some cases even

earlier. There are two methods of dealing with this disease in this state,— discarding susceptible varieties, and plowing up the patch after the first crop is off. These means are very effective when they are systematically pursued. There is a general and growing tendency to fruit the strawberry patch but one year, and there are strong reasons in favor of it aside from the desire to check the blight.

It has been proved by Professor Garman, of Kentucky, and others, that this leaf-blight can be subdued by fungicides, but it remained to make a practical test of the operation in strawberry fields in this state. Mr. Walter F. Taber, of Poughkeepsie, undertook experiments for us, but the season was so excessively dry that the rust did not spread, and he obtained no results. I also made a test upon the farm of A. L. Stickney, North Collins, Erie Co. The berries were Crescent and Lovett, planted upon light sandy or gravelly soil, and the patch had given one crop. Parts of the plantation were heavily sprayed on July 7, with Bordeaux mixture (6 lbs. sulphate copper, 4 lbs. lime, 40 gallons water). A prolonged drought followed, and the plantation was much neglected. A second spraying was given July 23, but the weeds were so numerous that the application could not be properly made. The disease did not spread rapidly because of the dryness. On

Leaf-blight of the Strawberry.

account of the drought and the weedy condition of the patch, no further treatment was given. Despite these disadvantages, when the final visit was made to the plantation October 13, it was found that there was nearly twice as much disease upon the untreated rows as upon the sprayed ones, a conclusion at which Mr. Stickney also arrived. There was some rust on the sprayed rows, but the spots upon the leaves were small and they had not interfered seriously with the welfare of the plants, for the rows were dark and vigorous in color. The unsprayed rows, however, were distinctly lighter in cast, and the leaves were more profusely spotted. It should be borne in mind that it had been nearly three months since the last spray was applied, and even then the conditions were the very worst for the success of the experiment.

Mr. H. L. Barton, of Mexico, Oswego county, has made a similar experiment, his account of which follows:

The strawberry leaf-blight first appeared with me the middle of last June upon Phillip's Seedling. About July, the Gillespie and Greenville were affected. About Aug. 1st I applied with brush-broom Bordeaux mixture (5 lbs. copper sulphate, 4 lbs. lime to 40 gallons water, then reducing with water to one-half the strength). In some ten or twelve days the leaves assumed a healthier appearance, new leaves showing. In a few days the blight again appeared worse than before. The Gillespie and Greenville were especially attacked by the disease. About the middle of September the mixture was again applied. Another application, with quicker results, was made about October 15. The blight was then less active and the vines were growing faster; the weather was cooler and not as favorable for the development of the disease. It seems to thrive in warm sultry weather. These three varieties are the only ones affected in some eighty kinds in cultivation. At present date the blight is scarcely perceptible because of the spray, the leaves having assumed a dark green, healthy appearance.

H. L. Barton

SUMMARY.

The leading variety of strawberry in western New York, for general cultivation, if one may judge from the replies of 110 growers, is the Wilson.

The second place seems to be given to Crescent. This is followed closely by Bubach, Haverland, Warfield and Parker Earle.

Each important strawberry center has its own list of favorites. Thus, while Wilson and Crescent are, in general, the most popular varieties, in Oswego county the leading berries seem to be Parker Earle and Bubach.

The most popular berry for earliness is Michel. Its closest second is Crescent, although this receives less than half the votes which the Michel does.

Parker Earle and Gandy contend for popularity as late berries, the former being more strongly endorsed in Oswego county. All things considered, Parker Earle is probably our best late berry, which has been well tested. There are more candidates amongst the late sorts than amongst the early ones.

The most productive variety is the Crescent, although the Parker Earle occupies this place in Oswego county and it is closely followed there by Haverland and Bubach. In general, Wilson and Warfield occupy second and third places for productivity.

The best shippers are Wilson, Parker Earle and Warfield, with the Wilson (save in Oswego county) being far in the lead.

There is no unanimity of opinion as to the best berry for home use. One hundred and one people mention 31 varieties for this honor. The four kinds receiving the most votes are Bubach, Crescent, Jessie, Wilson.

Altogether, 52 varieties are recommended for some purpose, of which less than a dozen are very prominent: Wilson, Crescent, Bubach, Haverland, Parker Earle, Warfield, Michel, Gandy, Jessie.

The blight or rust of strawberry leaves is the work of a parasitic fungus. This disease causes the foliage to become spotted and red, and the plant suffers. The chief injury is commonly wrought in summer.

This disease is partial to some varieties, and the first step towards its control is to discard such susceptible kinds.

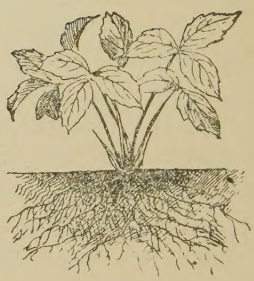
If one sets healthy plants upon clean land, there is generally little trouble with the blight until the first crop is removed. It has come to be a common and excellent practice, therefore, to fruit the patch but one year.

The disease is also readily controlled by thorough sprayings with Bordeaux mixture. If the attack has been pronounced the preceding year, the first spraying should probably be given in spring before the flowers appear. Ordinarily, the first treatment may be given as soon as the berries are picked, and the applications should be repeated two or three or more times, as occasion seems to demand.

L. H. BAILEY.

Set in a hurry.

Too high.



Good!